PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Implement Fishery Stocking Program Consistent With Native Fish Conservation

BPA project number: 8815600
Contract renewal date (mm/yyyy): 8815600 ☒ **Multiple actions?**

Business name of agency, institution or organization requesting funding
Shoshone-Paiute Tribes of the Duck Valley Indian Reservation

Business acronym (if appropriate) Sho-Pai Tribes - DVIR

Proposal contact person or principal investigator:

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NPPC Program Measure Number(s) which this project addresses
Specifically Section (§) 10.8C.1; Also: § 7.1B; § 10.1; § 10.1A; § 10.1E; § 10.1E1; §10.2; §10.2A1; § 10.2A.2; § 10.3E.9; § 10.8; § 10.8C; § 10.8C.3; § 10.8C.4; § 10.8C.6; § 10.8C.7.

FWS/NMFS Biological Opinion Number(s) which this project addresses
USFWS status review of redband trout pursuant to ESA listing; FERC relicensing considerations of the Hells Canyon Complex relative to the 1999 FCRPS (Hydropower Operations) Biological Opinion, NMFS

Other planning document references
CBFWA-Resident Fish Managers (1997) Multi-Year Implementation Plan
Federal MOA on Bonneville Power Administration Fish & Wildlife restoration funding
Department of Energy / BPA Tribal Policy
State of Idaho and State of Nevada Fish Management Plans affecting the Owyhee Basin
Independent Scientific Group (1996) Return to the River / (1997) Review of Columbia Basin Fish and Wildlife Program
NPPC Regional Multi-Species Framework Project/Process/Documents

Short description
To enhance fisheries on the DVIR we will stock two reservoirs (closed systems) with rainbow trout. This project will support a sustainable (put-and-take) harvest by Shoshone-Paiute tribal members and non-Indian anglers without impacting native trout.

Target species
Utilization: introduced trout species (e.g., rainbow, cutthroat, brook) for put and take fisheries. Protection: redband trout; bull trout, other resident fish species comprising the native fish community.

Section 2. Sorting and evaluation

Subbasin
Owyhee

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
☐ Anadromous fish ☒ Resident fish ☐ Wildlife	☐ Multi-year (milestone-based evaluation) ☐ Watershed project evaluation	☐ Watershed councils/model watersheds ☐ Information dissemination ☐ Operation & maintenance ☐ New construction ☒ Research & monitoring ☒ Implementation & management ☐ Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description
20536	Develop Management Plan & Assess Fish & Wildlife Of The Owyhee Basin, DVIR
20040	Develop a Fish & Wildlife Management Plan for the Owyhee Basin, DVIR
20041	Develop a Fish & Wildlife Conservation Law Enforcement Plan, DVIR
	Fish Assess Resident Fish Stocks Of The Owyhee Basin, DVIR
9701100	Enhance and Protect Habitat and Riparian Areas on DVIR
8815600	Implement Fishery Stocking Program Consistent with Native Fish Conservation
20092	Inventory Wildlife Species & Populations Of The Owyhee Basin, DVIR

20093	Evaluate the Feasibility for Anadromous Fish Reintroduction in the Owyhee

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
9701100	Enhance and Protect Habitat & Riparian Areas on the Duck Valley Indian Res	Habitat enhancement is a critical need for comprehensive fish & wildlife management of the Owyhee Basin DVIR
9501500	Lake Billy Shaw Wetlands Catch & Release Fishery O&M	A new BPA- funded reservoir was completed in 1998 on the DVIR -- the development of its fisheries needs to be integrated within a comprehensive fish management plan.
8815600	Stocking Fish in Lakes and Streams on the Duck Valley Indian Reservation	Stocking of hatchey trout in reservoirs and streams has been implemented for many years to provide fisheries and economic benefits to the DVIR -- this program needs to be re-evaluated & integrated in the rationale of a comprehensive fish management plan.
9500600	Shoshone-Bannock/Shoshone-Paiute Joint Culture Facility	A BPA-funded fish culture facility is being developed to provide trout production to supplement fisheries on Duck Valley and Fort Hall reservations. Its operation should be coordinated with the comprehensive Owyhee Basin resident fish management plan.

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1988	Rainbow trout stocking in Mountain View Reservoir, ID and Sheep Creek Reservoir, NV	uncertain
1989	(same as above)	
1990	(same as above)	
1991	(same as above)	
1992	(same as above)	

1993	(same as above)	
1994	(same as above)	
1995	(same as above)	
1996	(same as above)	
1997	(same as above)	
1998	(same as above)	
1999	(same as above)	Evaluation will be initiated

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Provide trout fisheries for tribal and non-tribal members at suitable times & locations on the Duck Valley Indian Reservation to maximize harvestable production and minimize the impact on native resident fish populations.	a	Purchase rainbow trout from private rearing facilities that are certified to be disease free and are of suitable size for put-and-take fisheries, i.e., catchable within one year of stocking.
		b	Schedule the delivery of the trout to maximize fish survival (i.e., schedule stocking to enable fish to acclimate to seasonal reservoir conditions such as temperature and dissolved oxygen) -- while sustaining population density and catch rates.
		c	Maintain equipment and vehicles needed to stock fish and monitor the fishery.
2	Monitor and evaluate the effectiveness of the stocking program in the context of a comprehensive fish management plan for the Owyhee River Basin, Duck Valley Indian Reservation component.	a	Monitor limnology and water quality of streams and reservoirs on a bi-weekly basis during the spring & summer seasons to determine suitable times and locations for stocking fish.
		b	Inspect influent and effluent channels on a bi-weekly schedule to ensure the proper functioning of screens that prevent migration of trout out of the reservoirs.
		c	Conduct a creel survey of Mountain View and Sheep Creek reservoir fisheries throughout the fishing

			season – in conjunction with enforcement patrols – to determine fish condition & growth rates and angler catch rates.
		d	Evaluate the stocking regime (schedule, numbers, and size composition) to reservoir surface area, volume of available habitat, limiting ecological factors, potential sources of mortality, and return to the creel.
		e	Coordinate the monitoring and evaluation activities of the fish stocking project with the other fish and habitat restoration projects within the framework of a comprehensive DVIR fish & wildlife management plan.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	1/2000	12/2000	Number and size of fish stocked in two reservoirs.		80.00%
2	1/2000	12/2000	Statistics on fish size & condition, angler effort, catch per unit effort, and estimates of total harvest.		20.00%
				Total	100.00%

Schedule constraints

Constraints include weather conditions, water year, limnological conditions, and mortalities to fish during transport from hatchery to the reservation. Also, of being able to secure certified disease free fish of the proper size and at the proper time.

Completion date

2010 or when anadromous salmonids return to the Owyhee River

Section 5. Budget

FY99 project budget (BPA obligated):

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel	0.5 FTE fishery technician / creel clerk	%9	12,000
Fringe benefits		%3	3,600
Supplies, materials, non-expendable property	Sampling equipment & screen maintenance covered on other related projects	%0	
Operations & maintenance	Vehicle lease & operation	%7	9,600
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		%0	
NEPA costs		%0	
Construction-related support		%0	
PIT tags	# of tags: (none)	%0	
Travel		%0	
Indirect costs	@ 26.6%	%5	6,703
Subcontractor	Purchase trout	%75	98,000
Other		%0	
TOTAL BPA FY2000 BUDGET REQUEST			$129,903

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount ($)
N/A	Cost sharing opportunities will be investigated, e.g., USFWS sport fisheries restoration	%0	
		%0	
		%0	
		%0	
Total project cost (including BPA portion)			$129,903

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	$138,800	$142,964	$147,253	$151,670

Section 6. References

Watershed?	Reference
☐	{Refer to the umbrella proposal "ShopaiGD1.doc"}
☐	
☐	
☐	

PART II - NARRATIVE

Section 7. Abstract

The Shoshone-Paiute Tribes will stock two closed reservoirs (Mt. View and Sheep Creek) in the Owyhee Basin with catchable and fingerling size rainbow trout. This project will help restore a subsistence fishery for tribal members that historically depended on the wild salmon and steelhead in the Owyhee River for food. This trout fishery is partial substitution for the loss of anadromous fish production due to construction and operation of hydroelectric dams on the Columbia and Snake Rivers. The put-and-take fishery also provides income for the Tribes in the form of fees from non-tribal members who come to fish in these waters. Rainbow trout will be purchased from private hatcheries and only certified disease-free fish will be put into the waters of the Reservation. This project is expected to last indefinitely -- unless naturally self-sustaining fisheries equal to the lost production can be restored. Monitoring (including creel surveys) will be implemented in FY2000 – as part of a comprehensive management plan -- to evaluate the success of the fishery. Trout in the reservoirs will be periodically sampled for length-weight-condition data and signs of disease. This fishery enhancement project has been successful during the past decade -- with many people coming from the western United States to fish and with Tribal members being able to provide food for their families. We are adaptively managing this project to minimize impacts on native fish stocks, especially endemic redband trout stocks.

Section 8. Project description

a. Technical and/or scientific background

An overall description of *technical and scientific background* is provided in the "umbrella" proposal form – ShopaiGD1.doc. The additional specific information relating to this specific sub-proposal -- *Implement Fishery Stocking Program Consistent with Native Fish Conservation* (Project 8815600) -- follows.

The Duck Valley Indian Reservation is located in southern Idaho and northern Nevada. The Owyhee River enters the Reservation at the southeast corner in Nevada and exits in

the northwest corner of the Reservation in Idaho, continuing into Oregon where it enters the Snake River. The surface water resources of the Reservation consists of the Owyhee River, two man-made lakes, over 350 miles of tributary streams, approximately 200 man-made or natural stock water ponds and springs, and a newly completed dam and reservoir in the Billy Shaw slough area.

The entire Owyhee Basin – encompassing the Duck Valley Indian Reservation (DVIR) -- is classified as a "*Blocked Area*" in the NPPC Fish and Wildlife Program (NPPC 1995; Section 10.8). The Owyhee Basin is in the upper Snake River Basin -- upstream from the Hells Canyon Complex that has completely blocked anadromous fish migrations for over 40 years (Hells Canyon Dam 1967; Oxbow Dam 1961; Brownlee Dam 1958). Prior to hydropower development the Owyhee Basin supported a large diverse community of native anadromous and resident fish populations. The complete extirpation of anadromous fish stocks from this area reduced the native salmonid species assemblage and greatly impacted the culture, religion and livelihood of the Shoshone and Paiute tribes that were dependent upon the once abundant anadromous fish resource. Resident fish and wildlife species in the subbasin were also impacted through lost productivity (absence of nutrient component attributable to anadromous fish) and habitat degradation relating to land-use practices (agriculture, grazing, logging, mining and municipal development) facilitated by hydropower development in the region.

Owyhee River Basin fish populations now consist of both native resident species (e.g, redband trout & bull trout) and remnants of hatchery reared salmonids (e.g., rainbow trout, cutthroat trout and brook trout) that were introduced since the 1950's to provide fishing opportunities (IDFG 1996; Burge and Miller 1993). Most of the trout stocked on the DVIR have been released into Sheep Creek and Mountain View reservoirs – to establish put-and-take recreational and subsistence fisheries. Both of these reservoirs are off-stream, and receive water from the East Fork Owyhee River via irrigation canals. Mountain View Reservoir is located on Boyle Creek on the Idaho side of the reservation; it has a surface area of about 640 acres and a maximum depth of 24 feet. Sheep Creek Reservoir is located on Sheep Creek (Nevada); it has a surface area of about 855 acres at full pool and has a maximum depth of 23 feet. Both Sheep Creek and Mountain View reservoirs are considered to be closed systems with respect to trout production. Trout do not reproduce in the reservoirs or the irrigation ditches and creeks that feed into them. The inlet and outlet canals to the reservoirs are screened and trout cannot not migrate out of the reservoirs into the Owyhee River. It is believed that all the trout that are stocked into these reservoirs are either caught in the fishery or die of other causes within a few years after release.

Since 1956, reservoirs and streams the Duck Valley Indian Reservation (DVIR) have been stocked with catchable trout under the auspices of the U.S. Fish and Wildlife Service (Burge and Miller 1990). During 1956 to 1990, Sheep Creek Reservoir was stocked with over 3 million rainbow trout ranging two to eleven inches in length (Table 1). Stocking of Mountain View Reservoir began in 1970; through 1990 over 2.5 million catchable trout (3-13 inches in length) have been released. During 1966 to 1981, the East Fork Owyhee River was stocked with over 72,000 rainbow trout ranging eight to eleven

inches in length. The USFWS discontinued stocking of hatchery fish in the Owyhee River in 1981. Extensive stocking of hatchery rainbow trout, cutthroat trout and bass by the Nevada Department of Wildlife continues upstream in Wildhorse Reservoir – and it is likely that some of these fish escape and stray downstream into the DVIR reach of the Owyhee River.

Table 1. Releases of hatchery rainbow in the Owyhee River, Sheep Creek Reservoir, and Mountain View Reservoir, Duck Valley Indian Reservation, 1956-1990 (Burge and Miller 1990).

Release Location	Years	Times	Species	Size (inches)	Number of Fish
East Fork Owyhee River	1966-81	16	RBT	8 to 11"	72,265
Sheep Creek Reservoir	1956-90	45	RBT	2 to 11"	3,102,554
Mountain View Reservoir	1970-90	26	RBT	3 to 13"	2,542,448
Total					**5,717,267**

Hatchery rainbow trout releases made in early spring apparently have higher survival rates and carryover to the following year. Diggs (1985) found that the fishery yield the next year in both Sheep Creek and Mountain View reservoirs declined for progressively later releases; i.e. from April to May to June. This was attributed to hatchery trout -- acclimated to constant cold temperatures – having lower survival rates when planted during the warm fluctuating temperature regime experienced in the DVIR reservoirs during the summer months. During 1981-83, the average catch rate in Sheep Creek and Mountain View reservoirs was 0.66 and 0.93 trout per hour, respectively (Table 2).

Table 2. Catch per unit effort (fish/hr) in Sheep Creek and Mountain View reservoirs, Duck Valley Indian Reservation, 1981-1983 (Diggs 1985).

Fishery Location	Stocking Date	Catch Year	Catch Rate (fish per hour)
Sheep Creek Reservoir	4/1/80	1981	0.90
	5/10/98	1982	0.66
	6/23/98	1983	0.42
Average:			**0.66**
Mountain View Reservoir	4/1/80	1981	1.20
	5/10/98	1982	0.91
	6/23/98	1983	0.69
Average:			**0.93**

Various hatchery sources (strains) of rainbow trout have been stocked into DVIR streams and reservoirs, including Eagle Lake strain and Arlee strain. Although records are incomplete, the USFWS stocked brook trout and cutthroat trout into DVIR reservoirs in 1983 and 1984 (Burge and Miller 1990). USFWS also recommended stocking of hatchery Lahontan cutthroat trout, although this has apparently not been done. Other USFWS recommendations include planting adult native stock redband trout into the tributary streams of the East Fork Owyhee River, DVIR.

Due to budget constraints, the USFWS catchable trout program on the DVIR was replaced with trout purchased from commercial Idaho hatcheries in 1981. The Northwest Power Planning Council's 1984 Program amendment included resident fish mitigation measures for the Owyhee Basin-DVIR, and in 1988 the Bonneville Power Administration (BPA) began funding the USFWS and the Shoshone-Paiute Tribe to continue the trout stocking program. For several years the USFWS developed annual trout stocking plans and documented the results of the program (Burge and Miller 1991, 1993a, 1993b).

BPA funded Project 8815600 "Stocking Fish in Lakes and Streams on the Duck Valley Indian Reservation" has been ongoing since 1988. It is required to provide mitigation for lost fish production and harvest for Tribal sustenance and income. We now need to balance the needs for fishing opportunities for Tribal members and economic development on the DVIR -- with maintenance of genetic diversity of native fish stocks. The Council's Fish & Wildlife Program recognizes the importance of biodiversity of both anadromous fish (**§** 7.1) and resident fish (§ 10.2B) – to protect the integrity and sustainability of ecosystems comprising the Columbia Basin. The current status of

Starting in year 2000, stocking of trout in waters of the DVIR for put-and-take fisheries will be integrated within the framework of a comprehensive fishery management plan (refer to the umbrella project description). Consideration will be given to the protection of the genetic integrity of native stocks of endemic species such as redband trout and bull trout (if present). Criteria will be developed as part of a hatchery trout stocking policy for the DVIR, including issues such as developing hatchery brood stock with the same genetic composition as native stocks and of stocking of non-native stocks only in closed systems that do not contain populations of native fish.

b. Rationale and significance to Regional Programs

An overall description of *rationale and significance to regional programs* is provided in the "umbrella" proposal form – ShopaiGD1.doc. The ongoing trout stocking project by the Shoshone-Paiute Tribes on the DVIR is specifically called for in Section 10.8C.1 of the Councils Fish & Wildlife Program: "*Annually stock catchable and fingerling trout of the appropriate stocks in Duck Valley Indian Reservation lakes and streams*."

BPA-funded Project 8815600 "Stocking Fish in Lakes and Streams on the Duck Valley Indian Reservation" has been ongoing since 1988. Trout stocking required as mitigation

for lost anadromous and resident fish production caused by the construction of the Hells Canyon Complex; it provides fishing opportunities for Tribal sustenance and income from non-tribal fishing fees. We are now at a crossroads where there is a clear need to maintain the genetic diversity of native fish stocks, while mitigating for the lost fish production that has always been important to the culture, religion, subsistence and economy of the Shoshone-Paiute Tribal members living on the DVIR.

In reviewing FY1999 proposals, the ISRP (1998; p 96) was critical of the fish stocking program, because it did not adequately consider impacts on resident fish, present results from past stocking in terms of fishery statistics, and did not include a monitoring and evaluation program. We recognize the ISRP comments as valid concerns and plan to correct these deficiencies for FY 2000 and beyond. We plan to include this fish stocking project under an umbrella proposal (ShopaiGD1.doc) that addresses the following elements within a comprehensive reservation-wide management framework:

- DVIR fish management plan, including adaptive management based on monitoring & evaluation (ShopaiGD2.doc)
- Conservation enforcement plan, including a review of fishing regulations and proposal for a systematic creel survey (ShopaiGD3.doc)
- Resident fish stock assessment, including evaluation of genetic composition of naturally spawning stocks with respect to possible genetic introgression from introduced species and hatchery stocks (ShopaiGD4.doc)

We propose to change the title of BPA Project 8815600 to: "*Implement Fishery Stocking Program Consistent with Native Fish Conservation*" – in order to emphasize the integration of trout stocking activities into an overall management plan designed to protect and enhance native stocks of trout. A special concern is the protection of the genetic integrity of endemic redband trout stocks on the DVIR. This species has been proposed for listing under the Endangered Species Act, and the USFWS is now undertaking a status review that will cover Idaho and Nevada stocks including the Owyhee River Basin.

Brief summaries of the specific Sections (§) from the Council's Fish and Wildlife Program (NPPC 1995) relating to this trout stocking sub-proposal are presented below:

§ 7.1B: Conserve genetic diversity
§ 10.1: Resident fish goal – The program goal for resident fish emphasizes the long-term sustainability of native fish in native habitats where possible. Use strategies of mitigation & substitution.
§ 10.1A: Principles for resident fish management strategies {watershed management, ecosystem diversity, productivity and stability, conservation of natural diversity of resident fish stocks}:
§ 10.1E: Project Implementation and selection
Documentation of resident fish losses attributable to the FCRPS;

- adaptive management principles, and appropriate monitoring and evaluation efficacy;
- coordination with fish and wildlife agencies and tribes;

- compliance with the Program policies;
- achievement of biological results;
- assessment of trade-offs with anadromous fish and wildlife activities;
- development of a management plan with sound biological objectives;
- consultation and coordination with interested parties;
- estimated costs and a schedule for implementation and evaluation; and
- fulfillment of standards of the Northwest Power Act.

§ 10.1E1: Implementation of identified resident fish projects by 2006.
§10.2: Production and watershed principles.
§10.2A1: Address resident fish as well as anadromous fish in developing a plan for genetic diversity as called for in measure 7.1.D.1.
§ 10.2A.2: Address potential impacts on resident fish, where such impacts exist, in developing basinwide guidelines to minimize genetic and ecological impacts of hatchery fish on wild and naturally spawning species as called for in measure 7.2A.1.
§ 10.3E.9: Acquire or construct a trout production facility and operate and maintain the facility for the production of native trout species for stocking on the Fort Hall Indian Reservation and elsewhere. Assess opportunities for joint production strategies with the Shoshone-Paiute Tribes, including the training of tribal members in fish culture.
§ 10.8: Resident fish substitutions.
Salmon and steelhead probably never will be able to return to some areas of the basin because of blockages by dams. These include the areas above Chief Joseph and Grand Coulee dams and the Hells Canyon Complex, as well as other smaller blocked areas. In its analysis of the contribution of the hydropower system to salmon and steelhead losses, the Council has addressed the extent to which resident fish substitutions should be used to mitigate losses of salmon and steelhead production in these areas.
The Council has concluded that: 1) mitigation in blocked areas is appropriate where salmon and steelhead were affected by the development and operation of the hydroelectric projects; 2) to treat the Columbia River and its tributaries as a system, resident fish substitutions are reasonable for lost salmon and steelhead in areas where in-kind mitigation cannot occur; and 3) flexibility in approach is needed to develop a program that complements the activities of the fish and wildlife agencies and tribes and is based on the best available scientific knowledge. For substitution purposes, resident fish may include landlocked anadromous fish (e.g., white sturgeon, kokanee and coho), as well as traditionally defined resident fish species.
§ 10.8A: Resident Fish Substitutions Policy
The substitution of resident fish to make up for losses of anadromous fish in areas now permanently blocked to salmon and steelhead reflects the Council's resolve to address complex, long-term problems. Historical records show that the Columbia River Basin Indian tribes relied extensively on salmon and steelhead, and the permanent loss of these resources has had incalculable impacts on tribal economies, cultures and religions. Historically, the Council approved projects in the areas above Chief Joseph/Grand Coulee, and in the blocked areas above Hell's Canyon Dam.
§ 10.8C: Resident Fish Substitution Projects Above Hells Canyon Dam
The following resident fish substitution activities and projects in the blocked area above Hells Canyon Dam will partially mitigate for salmon and steelhead losses incurred in this

blocked area as a result of the construction and operation of hydropower projects in the Columbia River Basin.

Shoshone-Paiute Tribes:

§ 10.8C.1: Annually stock catchable and fingerling trout of the appropriate stocks in Duck Valley Indian Reservation lakes and streams.

§ 10.8C.3: Evaluate alternative sources of catchable and fingerling resident fish.

§ 10.8C.4: Analyze feasibility of developing an additional lake fishery at Coyote Sink. Submit feasibility study with recommendations to the Council. Implement upon Council approval of recommendations.

§ 10.8C.6: Acquire or construct a trout production facility and operate and maintain the facility for the production of trout for stocking on the Duck Valley Indian Reservation and elsewhere. Assess opportunities for joint production strategies with the Shoshone-Bannock Tribe, including the training of tribal members in fish culture.

§ 10.8C.7: Bonneville -- Fund the Shoshone-Paiute Tribe projects listed above.

c. Relationships to other projects

The following BPA-funded projects are ongoing during FY1999-2000 for resident fish mitigation and enhancement on the DVIR. All of these projects are interrelated with the proposed BPA Project 8815600 to: "*Implement Fishery Stocking Program Consistent with Native Fish Conservation*".

Project 9701100 "Enhance and Protect Habitat & Riparian Areas on the Duck Valley Indian Reservation" [NPPC measure 10.8C.5] Fish stocking should be conducted in approptiate waters with water quality and limnological conditions suitable for optimum growth and survival. Our ongoing study of existing habitat conditions (springs, streams, and reservoirs) and the overall Owyhee River watershed assessment provides data needed to evaluate suitability of waters for trout stocking.

Project 9501500 "Lake Billy Shaw Wetlands Catch & Release Fishery O&M" [NPPC measure 10.8C; 10.8C4] A new BPA-funded dam was completed in 1998 on the DVIR and Lake Billy Shaw will begin filling in 1999 – selection of specific hatchery stocks and/or native species to stock into the reservoir -- for the development of its fisheries needs to be integrated within a comprehensive fish management plan that gives consideration to genetic diversity of native fish populations and overall biodiversity of the ecosystem.

Project 9500600 "Shoshone-Bannock/Shoshone-Paiute Joint Culture Facility" [NPPC measure 10.8C3; 10.8C6] A BPA-funded fish culture facility is being developed to provide trout production to supplement fisheries on Duck Valley and Fort Hall reservations. This facility is a possible source of native species/stocks of trout for stocking on the DVIR in year 2000. Its production plan & operation should be coordinated with the comprehensive Owyhee Basin resident fish management plan -- including Lake Billy Shaw fishery development and conservation of genetic diversity of native trout populations.

Additional projects are proposed for FY 2000 -- under an umbrella proposal (ShopaiGD1.doc) -- that are relevant to the implementation of this fish stocking project:

Develop a Fish & Wildlife Management Plan for the Owyhee Basin, DVIR (ShopaiGD2.doc)
Developing a DVIR fishery management plan that includes adaptive management based on monitoring & evaluation – is prerequisite to a fish stocking program.

Develop a Fish & Wildlife Conservation Law Enforcement Plan, DVIR (ShopaiGD3.doc)
This project will support the put-and-take fishery implementation -- by developing a Conservation Enforcement Plan, including a review of fishing regulations and proposal for a systematic creel survey.

Assess Resident Fish Stocks Of The Owyhee Basin, DVIR (ShopaiGD4.doc)
This project will be essential to evaluate past impacts of fish stocking practices and indicate what habitats can be stocked with hatchery trout without impacting native trout populations. The proposed project will assess existing resident fish populations, including evaluation of genetic composition of naturally spawning stocks with respect to possible genetic introgression from introduced species and hatchery stocks.

d. Project history (for ongoing projects)

Since 1956, reservoirs and streams the Duck Valley Indian Reservation (DVIR) have been stocked with catchable trout (rainbow, brook, and cutthroat trout) under the auspices of the U.S. Fish and Wildlife Service (Burge and Miller 1990). Due to budget constraints, the USFWS catchable trout program on the DVIR was replaced with trout purchased from commercial Idaho hatcheries in 1981. The Northwest Power Planning Council's 1984 Program amendment included resident fish mitigation measures for the Owyhee Basin-DVIR, and in 1988 the Bonneville Power Administration (BPA) began funding the USFWS and the Shoshone-Paiute Tribe to continue the trout stocking program. For several years the USFWS developed annual trout stocking plans and documented the results of the program (Burge and Miller 1991, 1993a, 1993b).

"Stocking Fish in Lakes and Streams on the Duck Valley Indian Reservation" (Project 8815600) has been funded by Bonneville Power Administration as partial substitution for the loss of resident fish habitat due to the construction of federal and non-federal hydroelectric dams on the Columbia and Snake Rivers as part of the Federal Columbia River Power Sysyem (FCRPS). The Hells Canyon Complex resulted in the complete elimination of anadromous fish and greatly disturbed the habitat for native resident fish in the Owyhee River and its tributaries on the DVIR. The loss adversely impacted our tribal treaty rights and natural resources, as well as negatively impacting our social, cultural, and economic resources on the Duck Valley Indian Reservation.

The Shoshone-Paiute Tribe has received relatively little mitigation and enhancement funding from BPA (about $2.0 million since 1984, excluding Billy Shaw Dam construction costs) – compared to the great losses of fish production caused by the FCRPS. The trout stocking project has been the major fishery enhancement project on the DVIR to date; through 1998 its cost has ranged from about $23,000 to $110,000 per year (Table 3).

Table 3. BPA funding for the Shoshone-Paiute Tribes' resident fish stocking project, 1984-1998 (Source Kim Erdman, BPA Access Data Base).

Fiscal Year	ProjNum	ShortTitle	SummaryDescription	Budget Amount
1984	8380800	ANADROMOUS FISH PROGRAM GOALS: SHOSHONE – PAIUTE	Technical assistance grant to the Shoshone-Paiute Tribe to develop anadromous fish goals for the Columbia Basin.	$7,900
			Purchase Trout for Stocking in Reservoirs	
1988	8815600	DUCK VALLEY RESIDENT FISH PROJECT	Fund fish purchase for Sheep Creek and Mountain.View reservoirs on the Duck Valley Indian Reservation and contribute to management costs of the sport fishery at the reservoirs.	$59,000
1989	8815600		(same as above)	$53,000
1989	8815600		(same as above)	$23,370
1990	8815600		(same as above)	$50,000
1990	8815600		(same as above)	$32,614
1991	8815600		(same as above)	$52,386
1992	8815600		(same as above)	$85,000
1993	8815600		(same as above)	$70,275
1993	8815600		(same as above)	$58,744
1994	8815600		(same as above)	$100,000
1995	8815600		(same as above)	$0
1996	8815600		(same as above)	$100,012
1997	8815600		(same as above)	$0
1998	8815600		(same as above)	$110,000
			Subtotal:	$794,401

The stocking of rainbow trout in the waters of the Duck Valley Indian Reservation provides a subsistence fishery for members of the Shoshone-Paiute Tribes. Prior to the construction and operation of the hydroelectric dams anadromous fish were an important part of the Tribes culture, heritage, economy, and an important food source. This project helps ease some of the economic burden associated with the loss of salmon through the sale of fishing permits to non-tribal members and aids the local economy with money spent from the tourists that camp and fish on the Reservation. Fish stocking of the Reservation waters has been successful in providing tribal members with subsistence fishing and non-Indians with recreational opportunities. Over the past few years the number of people fishing has steadily increased. A creel survey has been initiated in order to monitor: numbers of trout harvested; the number of non-Indian people coming to

the reservation to fish; and the number of tribal members utilizing the reservoir and stream fisheries. Analysis of quantitative data from the creel survey will be included in the proposed Monitoring and Evaluation component of the Fish & Wildlife Management Plan for the Owyhee Basin, DVIR.

e. Proposal objectives

The overall goal of the Shoshone-Paiute "umbrella project" (refer to ShopaiGD1.doc) is to coordinate a comprehensive Fish, Wildlife and Habitat Restoration Plan for the Duck Valley Indian Reservation -- including fish & wildlife management planning, fish stock assessment, and wildlife inventory of the Owyhee Basin, DVIR component. The two primary objectives of this sub-proposal "*Implement Fishery Stocking Program Consistent with Native Fish Conservation*" are:

Objective 1. **Provide trout fisheries for tribal and non-tribal members at suitable times & locations on the Duck Valley Indian Reservation to maximize harvestable production and minimize the impact on native resident fish populations.**

Objective 2. Monitor and evaluate the effectiveness of the trout stocking program in the context of a comprehensive fish management plan for the Owyhee River Basin, Duck Valley Indian Reservation component.

f. Methods

The overall strategic planning and adaptive program management for an integrated suite of fish and wildlife enhancement projects on the Duck Valley Indian Reservation (DVIR) are described in the "umbrella project" (refer to ShopaiGD1.doc). It will incorporate two related approaches to achieve an integrated fish & wildlife management plan and project implementation based on scientific principles.

- First, develop an internally consistent and comprehensive Shoshone-Paiute strategic plan for the restoration of fish, wildlife, and watershed resources on the Duck Valley Indian Reservation.
- Second, coordinate with state, regional, and federal planning processes (e.g., Idaho & Nevada fish management plans, NPPC Fish & Wildlife Program, Multi-Species Framework, ESA recovery plans, etc.) to develop a management framework that maximizes opportunities cooperative efforts and successful restoration of the Owyhee ecosystem.

A monitoring and evaluation (M&E) plan will be an integral part of the DVIR fish & wildlife framework and M&E will be incorporated into individual projects. The specific methods employed in BPA Project 8815600 sub-proposal -- "*Implement Fishery Stocking Program Consistent with Native Fish Conservation*" -- are described in the following section.

1. Stocking trout into DVIR reservoirs for put-and-take fisheries.

- Fish will be purchased from one or more private hatcheries in southern Idaho and will be transported to the Duck Valley Indian Reservation at various times throughout the year (from April to early October) depending on reservoir conditions and fishery demands.

- Trout will be transported in hatchery tanker vehicle to the Reservation by experienced fish culturists – fish mortality has been negligible in the past.

- Catchable and fingerling size rainbow trout will be stocked into Mt. View and Sheep Creek reservoirs at suitable time and locations.

- Vehicles will be leased and equipment will be acquired & maintained to support the trout stocking and fishery monitoring activities.

2. Monitoring and evaluation the effectiveness of the fish stocking program.

- Monitor the following limnology and water quality of Mountain View and Sheep Creek reservoirs on a bi-weekly basis during the spring & summer seasons: temperature, dissolved oxygen, percent saturation, and secchi disc transparency. Also measure the inflow and outflow water temperatures. These data will be evaluated to determine suitable times and locations for stocking fish. This task will be coordinated with the ongoing habitat restoration project.

- Influent and effluent channels will be inspected on a bi-weekly schedule to ensure the proper functioning of screens that prevent migration of trout out of the reservoirs.

- Conduct a creel survey of Mountain View and Sheep Creek reservoir fisheries throughout the fishing season – a minimum of one week day and one week-end day per reservoir each week. The creel survey will be conducted in conjunction with conservation enforcement patrols. Numbers of vehicles, boats and anglers will be counted at each access site to estimate weekly angler effort. All anglers contacted will be interviewed to determine hours fished and total catch -- to estimate catch per unit effort. A subsample of at least 20 fish per reservoir per week will be measured for fork length (mm) and weight (g) – to determine fish condition and trout population size composition trends.

- Evaluate the stocking regime (schedule, numbers, and size composition) to reservoir surface area, volume of available habitat, limiting ecological factors, potential sources of mortality, and return to the creel.

- Coordinate the monitoring and evaluation activities of the fish stocking project with the other fish and habitat restoration projects within the framework of a comprehensive DVIR fish & wildlife management plan.

g. Facilities and equipment

Refer to the "umbrella project" (ShopaiGD1.doc) for a description of *facilities and equipment*.

h. Budget

This proposal is designed sub-proposal under the Shoshone-Paiute "umbrella project" for BPA-funded fish & wildlife implementation projects on the Duck Valley Indian Reservation – therefore oversight by the Fish, Wildlife and Parks Director is covered by the umbrella project (ShopaiGD1.doc) and not included here. The personnel category is for a half-time time fisheries technician.

Fish sampling equipment, field supplies, and reservoir screen maintenance costs will be covered by the habitat restoration project and Lake Billy Shaw O&M.

The O&M category includes a 4-wheel drive vehicle lease from GSA and maintenance of project equipment.

Fringe benefits are based on a 30% rate.

The Travel category is zero, assuming fish transportation is covered in the cost of purchasing fish.

The Indirect Costs of $6,703 are based on 26.6% of the subtotal categories – excluding subcontracting / fish costs.

The subcontractor category is for purchasing rainbow trout and transporting the fish to the Duck Valley Indian Reservation.

Section 9. Key personnel

Refer to the "umbrella project" (ShopaiGD1.doc) for a resumes of *key personnel*.

Section 10. Information/technology transfer

Refer to the "umbrella project" (ShopaiGD1.doc) for a description of proposed *information and technology transfer* media and methods.

Congratulations!